IVANOV, S.V.; POPOV, V.Ye.; SHASKOL'SKIY, B.V.; SHUSTIN, B.P.

Program controlled four-spindle milling machine. Stan.i instr. 35 no.8:10-12 Ag '64. (MIRA 17:10)

IVANOV, S. Ya.

PHASE I TREASURE ISLAND BIBLIOGRAPHIOAL REPORT AID 695 - I

BOOK Call No.: AF666889

Author: IVANOV, S. YA.

Full Title: AERIAL GUNNERY FROM MOBILE AIRCRAFT GUNNERY INSTALLATIONS

Transliterated Title: Vozdushnaya strel'ba iz podvizhnykh strelkovykh ustanovok samoleta

PUBLISHING DATA

Originating Agency: All-Union Voluntary Society for the Promotion of the Air Force

Publishing House: Publishing House of the DOSARM

Date: 1950 No. of pp.: 143 No. of copies: Not given

Editorial Staff: None

PURPOSE: The purpose is not stated, However, the text indicates that the book may be used for pre-military training.

TEXT DATA

Coverage: This is a popular booklet in which the fundamentals of the theory of aerial gunnery and the principles of the use of aircraft armament in aerial combat are given. In particular, the author briefly discusses the following topics: ballistics, aerial gun sights, foreign fighters, scattering of aircraft projectiles, principles of gunnery layouts, determination of

Vozdushnaya strel'ba iz podvizhnykh strelkovykh AID 695 - I
ustanovok samoleta

initial data for sighting and firing, principles of sighting and defensive aerial action.

No. of References: None

Facilities: None

2/2

IVANOV, S. Ya.

"Aerial Fire from Movable Aircraft Firing Apparatus," 1952.

PERSININ, Yu.N.; IVANOV, S.Ya.

Accelerated start of a topping turbine. Prom. energ. 17 no.9:8
S '62. (MIRA 15:8)

(Steam turbines)

VOLKOVSKIY, P.A., kand.tekhn.nauk; KSENOFONTOVA, V.V., inzh.; IVANOV, S.Ya., inzh.

Methods of reclamation and farm utilization of the floodlands of the Moskva River. Gidr. i mel. 16 no.2:47-55 F '64. (MIRA 17:3)

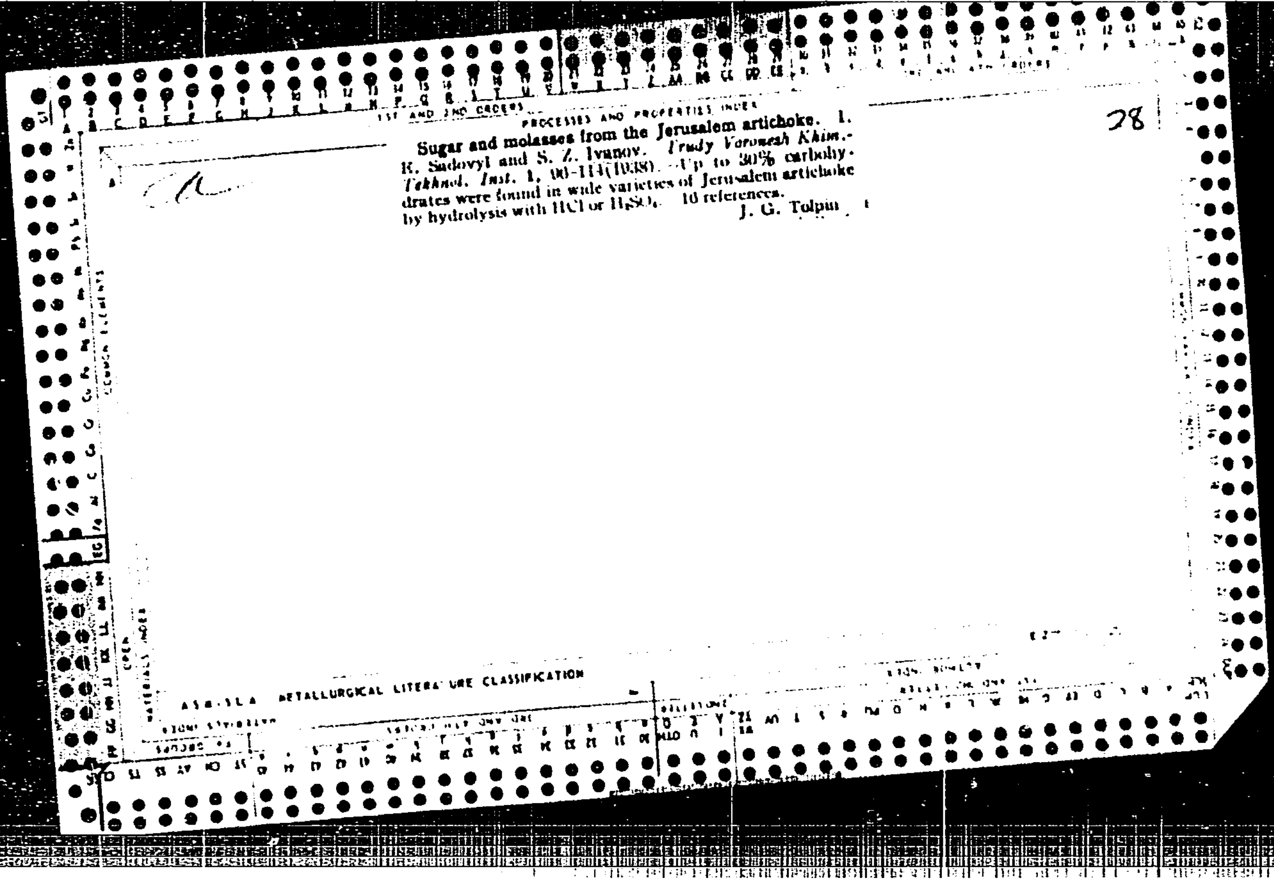
IVANOV, S.Z.; DANILEVSKIY, V.V., akademik, red.; MOROZOV, V.V., red.;
LIMANOVA, M.I., tekhn.red.

[Anastasii Egorovich Zaikevich; a historicobiographical sketch] Anastasii Egorovich Zaikevich; istoriko-biograficheskii ocherk. Pod red. V.V.Danilevskogo. Khar'kov, Khar'kovskoe knizhnoe izd-vo, 1959. 148 p. (MIRA 13:1)

1. AN USSR (for Danilevskiy).
(Zaikevich, Anastasii Egorovich, 1842-1931)

IVANOV, S.Z., inzh.

Improving the trial processes for trawlers with regular pitch propellers. Sudostroenie 26 no.8:48-50 Ag '60. (MIRA 13:10)
(Ship trials) (Trawls and trawling)



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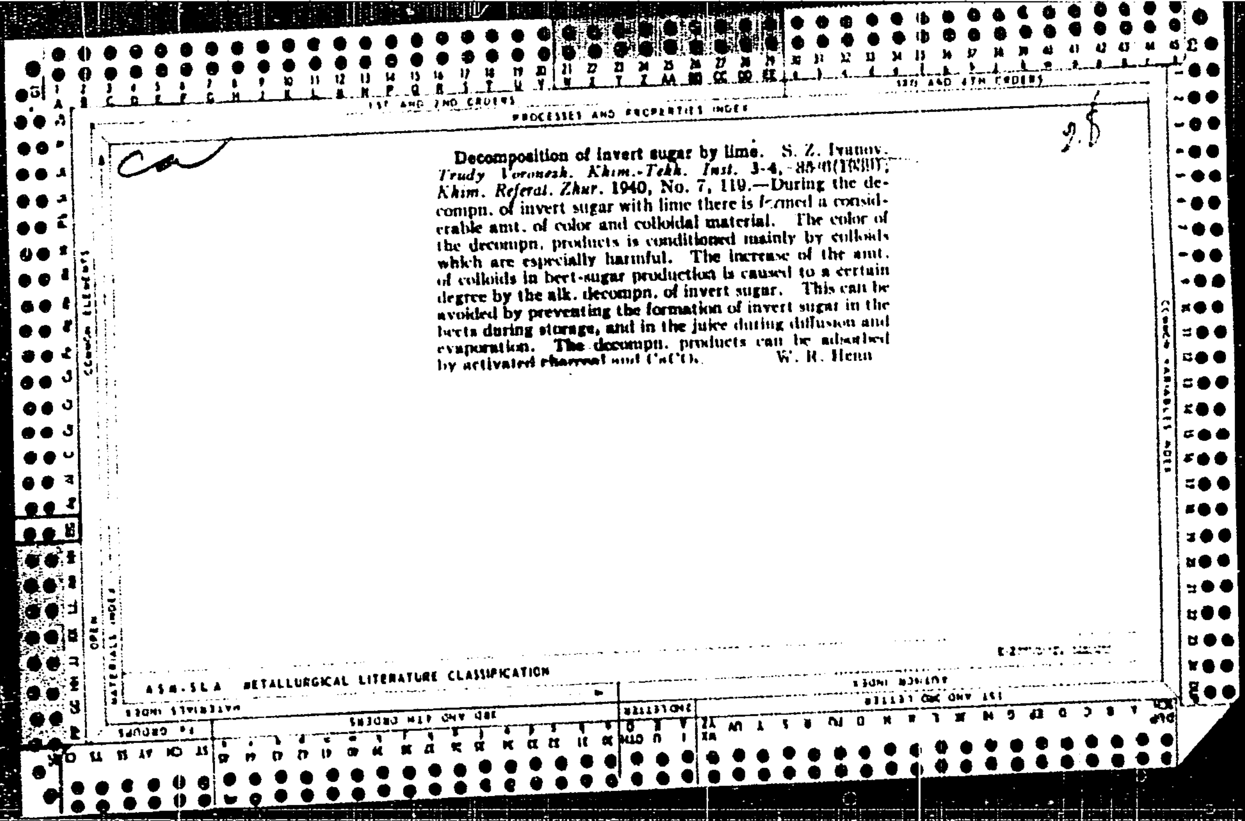
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION
28

Sugar and molasses from the Jerusalem artichoke. I. K. Sadovyi and S. Z. Ivanov. *Trudy Voronezh Khim.-Tekhnol. Inst.* 1, 90-114(1938).—Up to 30% carbohydrates were found in wide varieties of Jerusalem artichoke by hydrolysis with HCl or H_2SO_4. 10 references.

J. G. Tolpin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Ca

2.5

Decomposition of invert sugar by lime. S. Z. Ivanov. *Trudy Voronezh. Khim.-Tekh. Inst.* 3-4, 85-91(1939); *Khim. Referat. Zhur.* 1940, No. 7, 119.—During the decompn. of invert sugar with lime there is formed a considerable amt. of color and colloidal material. The color of the decompn. products is conditioned mainly by colloids which are especially harmful. The increase of the amt. of colloids in beet-sugar production is caused to a certain degree by the alk. decompn. of invert sugar. This can be avoided by preventing the formation of invert sugar in the beets during storage, and in the juice during diffusion and evaporation. The decompn. products can be adsorbed by activated charcoal and $CaCO_3$. W. R. Henn

IVANOV, S. Z.

(Control and accounting in the sugar refining industry) Moskva, Pishchepromizdat, 1944. 78 p. (49-42737)

TP390.I8

1. Sugar - Manufacture and refining. 2. Beets and beet sugar. I. Smirnov, V.A., jt. au. II. Silin, P. M. Khimicheskii kontrol'sveklosakharnogo proizvodstva.

IVANOV, S. Z.

Chemical Abst.
Vol. 48 No. 3
Feb. 10, 1954
Sugar, Starch, and Gums

①

Typical color of the sugar products in the sugar manufacturing. S. Z. Ivanov. *Trudy Leningrad Tekhnol. Inst. Pishchevoi Prom.* I(IX), 41-51(1949).—Typical color for sugar products is obtained from curves for light transmittancy of waves from 430 to 760 mμ. Color masses fitting this color curve can be used as standards for visual color detn. Formulas and tables are given. V. B. B.

IVANOV, S. Z.

19965 IVANOV, S. Z. Iz proshlogo russkogo sveklosakharnogo praizvodstva. Sakhar. prom-st', 1949, No. 6, s. 11-17. Bibliogr: s. 13, 15, 17.

SO: LETOPIS ZHURNAL STATEY, Vol. 27, Moskva, 1949.

IVANOV, S. Z.

34056 K 150-letiyu poluchenie. Sveklovichnogo sakharu v Rossii. Sakhar. prom-st', 1949, No. 11, s. 8-11.--Bibliogr: 14 nazv.

SO: Knizhnaya, Letopis', Vol. 7, 1955

IVANOV, S.S.; YUNITSKAYA, N.V.

Colorimetric glasses. Sakharnaya Prom. 23, No.10, 33-5 '49.(MLRA 2:9)
(CA 47 no.14:7176 '53)

IVANOV, S. Z.

Sugar - Periodicals

Periodicals on sugar production in pre-revolutionary Russia. Sakh. prom. 26 no. 3, 1952.

9. Monthly List of Russian Accessions, Library of Congress, June 195~~3~~2, Uncl.

1. IVANOV, S. Z.

2. USSR (600)

4. Sugar Industry-History

7. From the past of the Russian sugar industry.
Sakh. prom. 26 No. 11, 1952

9. Monthly Lists of Russian Accessions, Library of Congress, March 1953, Unclassified.

IVANOV, S.Z.

Chemical Abst.
Vol. 48 No. 3
Feb. 10, 1954
Sugar, Starch, and Gums

(2)

Comparative appraisal of different methods of refining. S. Z. Ivanov (Leningrad Technol. Inst. Food Ind.). *Sakharnaya Prom.* 27, No. 6, 16–17(1953).—Discussion.

V. E. Baikow

IVANOV, S.Z.; SMIRNOV, L.V.

Characteristics of colorimetric glass from different sources. Sakh.prom. 27 no.8:31-33 Ag '53. (MLRA 6:8)

1. Leningradskiy tekhnologicheskiy institut pishchevoy promyshlennosti.
(Glass) (Sugar--Analysis and testing)

Ivanov, S. Z.

USSR.

Application of ion exchangers for correction of pH in sugar-refining process. S. Z. Ivanov. *Sakharnaya Prom.* 28, No. 7, 9-11(1954).—Refinery liquors or run off has a tendency to decrease in pH. The correction of the pH with milk of lime or soda ash is not practical because it increases the ash content of the product as well as its color and increases the melassogenic factor. A sugar liquor with slight acid reaction filtered through an ion exchanger, which adsorbs the H ion, increases the pH to the desirable level, without change of ash content and at the same time the color of sugar liquor is decreased. V. R. Baikow

IVANOV, S.Z.

D.I.Mendeleev on frmentation processes. Spirt.prom. 21 no.1:25-26 '55. (MIRA 8:5)

1. Leningradskiy tekhnologicheskiy institut pishchevoy promyshlennosti.

(Mendeleev, Dmitrii Ivanovich, 1834-1907)
(Fermentation)

IVANOV, S.Z.; KLIMENKO, V.A.

Refined sugar and confectionary combine. Sakh.prom.30 no.2:55-56 F '56. (MLRA 9:7)

1.Leningradskiy tekhnologicheskiy institut pishchevoy promyshlennosti (for Ivanov).2.Odesskiy sakharo-rafinadnyy zavod (for Klimenko)

(Sugar industry)

IVANOV, S.Z.: SMIRNOV, L.V.; KAMINSKAYA, A.B.

Standardization of the technical unit of chromaticity. Sakh.prom. 31 no.3:23-25 Mr '57. (MLRA 10:4)

1. Leningradskiy tekhnologicheskiy institut pishchevoy promyshlennosti.
(Sugar--Analysis and testing) (Color measurement)

IVANOV, S. [redacted]

Role of Leningrad scientists in sugar industry development.
Sakh.prom. 31 no.7:9-13 Jl '57. (MLRA 10:8)

1. Leningradskiy tekhnologicheskiy institut pishchevoy promyshlennosti.
(Leningrad--Sugar industry--History)

IVANOV, S.Z.

IVANOV, S.Z.

At the Leningrad Technological Institute of the Food Industry.
Sakh.prom.31 no.9:63-64 S '57. (MIRA 10:12)
(Leningrad--Sugar industry)

IVANOV, S.Z.

For systematic and precise terminology. Sakh. prom. 31 no.10:17-19 O '57. (MIRA 11:1)

1. Leningradskiy tekhnologicheskiy institut pishchevoy promyshlennosti.

(Sugar industry--Terminology)

IVANOV, S.Z., Doc Tech Sci--(diss) "Decomposition of saccharose and ways of its reduction in ~~the~~ sugar manufacture ~~industry~~." Mos, 1958. 51 pp with graphs (Min of Higher Education USSR. Mos Technological Inst of the Food Industry) 150 copies. List of author's works ~~at end of~~, pp 48-50 (22 titles) (KL, 49-58, 122)

IVANOV, S.Z.

Anion-exchange method for the alkalization of process water in the manufacture of refined sugar. Sakh. prom. 32 no.3:35-36 Mr '58.
(MIRA 11:4)

1. Leningradskiy tekhnologicheskiy institut pishchevoy promyshlennosti.

(Sugar manufacture) (Ion exchange)

OSTROVSKIY, Aleksey Ivanovich, prof.; MALCHENKO, A.L., prof., retsenzent; AGEYEV, P.M., dotsent, retsenzent; IVANOV, S.Z., dotsent, retsenzent; VESELOV, I.Ya., prof., spetsred.; KRUGLOVA, G.I., red.; GOTLIB, E.M., tekhn.red.

[General technology of food products] Obshchaia tekhnologiia pishchevykh veshchestv. Moskva, Pishchepromizdat, 1959. 647 p. (MIRA 13:2)

(Food industry)

IVANOV, S.Z.

Technological Institute of the Food Industry has been established in Voronezh. Sakh.prom. 33 no.6:64-65 Je '59.
(MIRA 12:8)

(Voronezh--Food industry--Study and teaching)

S/081/62/000/010/001/085
B158/B144

AUTHOR: Ivanov, S. Z.

TITLE: The Voronezh Technological Institute is 30 years old

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 10, 1962, 4, abstract 10A21 (Tr. Voronezhsk. tekhnol. in-ta, v. 16, 1960, 3-17)

TEXT: The Institute was founded in 1930, based on the Technological Division of the Voronezh Agricultural Institute. The article gives an outline of the Institute's history, its present status and prospects of development. [Abstracter's note: Complete translation.]

Card 1/1

IVANOV, S.Z.

Terminology of technical manuals. Sakh.prom. 34 no.3:72-74
Mr '58. (MIRA 13:6)
60 (Sugar--Terminology)

AGEYEV, Leonid Mikhaylovich, dots.; IVANOV, Sergey Zakharovich, prof.; SMIRNOV, Valentin Aleksandrovich, prof.; SILIN, P.M., prof., red.; MURASHOVA, O.I., red.; SOKOLOVA, I.A., tekhn. red.

[Technology of sugar substances; general course] Tekhnologiia sakharnykh veshchestv; obshchii kurs. Pod red. P.M.Silina. Moskva, Pishchepromizdat, 1961. 488 p. (MIRA 15:3)
(Sugar) (Starch)

VASILEGA, V.S.; IVANOV, S.Z.; SAPRONOV, A.R.

Good manual for students and factory workers. Sakh. prom. 35 no. 5:75-78 My '61. (MIRA 14:5)
(Sugar manufacture)

ZOTOV, V.P.; MAKHINYA, M.M.; PARSHIKOV, M.Ya.; GAVRILOV, A.N.; SILIN, P.M.; GOLOVIN, P.V.; KHEYZE, N.V.; BUZANOV, I.F.; KHELEMSKIY, M.Z.; YAPASKURT, V.V.; SHARKO, A.P.; SANOV, N.M.; LITVAK, I.M.; IVANOV, S.Z.; LEPESHKIN, I.P.; KLEYMAN, B.M.; YEPISHIN, A.S.; GOLUB, S.I.; GERASIMOV, S.I.; GEUBE, V.R.; PASHKOVSKIY, F.M.; LITVINOV, Ye.V.; BENIN, G.S.; IVANOV, P.Ya.; VINOGRADOV, N.V.; PONOMARENKO, A.P.: ZHIDKOV, A.A.; KOVAL', Ye.T.; KARTASHOV, A.K.; NOVIKOV, V.A.

Sixtieth birthday of A.N.Shakin, Director of the Central Scientific Research Institute of the Sugar Industry. Sakh. prom. 35 no.7:33 Jl '61. (MIRA 14:7)
(Shakin, Anatolii Nikitovich, 1901-)
(Sugar industry)

IVANOV, S.Z.

For better coordination of research on sugar beets and sugar. Sakh. prom. 35 no.11:5-7 N '61. (MIRA 15:1)

1. Voronezhskiy tekhnologicheskiy institut.
(Sugar research) (Sugar beets)

IVANOV, Sergey Zakharovich, prof., doktor tekhn. nauk; SOKOLOVSKAYA,
T.A., red.; ZARSHCHIKOVA, L.N., tekhn. red.

[Complex processing of granulated sugar]Kompleksnaia pererabotka sakhara-peska. Moskva, Pishchepromizdat, 1962. 66 p.
(MIRA 15:11)

(Sugar manufacture)

VASILEGA, V.S.; IVANOV, S.Z.; SAPRONOV, A.R.

"Technology of sugar manufacture from sugar beets" by I.M.Litvak. Reviewed by V.S.Vasilega, S.Z.Ivanov, A.R.Sapronov. Izv.vys.-ucheb.zav.; pishch.tekh. 2:160-162 '62. (MIRA 15:5)
(Sugar manufacture) (Litvak, I.M.)

KHARIN, S.Ye.; IVANOV, S.Z.

Complex utilization of agricultural products by the processing industries. Izv.vys.ucheb.zav.; pishch.tekh. no.4:18-19 '62. (MIRA 15:11)

1. Voronezhskiy tekhnologicheskiy institut, kafedra fizicheskoy i kolloidnoy khimii i kafedra tekhnologii sakharistykh veshchestv. (Food industry--By-products)

IVANOV, Sz.Z. [Ivanov, S.Z.], prof.

Prof. Pavel Mikhailovich Silin at 75. Cukoripar 15 no.5:140
My '62.

IVANOV, S.Z.; SAPRONOV, A.R.; CHERNIKINA, V.G.

Improving the method for determining the chromaticity of sugar products. Sakh. prom. 37 no.10:5-11 0 '63. (MIRA 16:12)

1. Voronezhskiy tekhnologicheskiy institut.

ANYUSHKIN, Ye.S.; IVANOV, S.Z.

Dictionary of starch manufacture terms in ten languages.
Sakh. prom. 37 no.10:52-53 O '63. (MIRA 16:12)

KARPENKO, P.V., doktor sel'khoz. nauk, zasl. deyatel' nauki RSFSR;
KULESHOV, N.N., akademik, retsenzent; ORLOVSKIY, N.I.,
prof., retsenzent; FILIPETS, G.V., prof., retsenzent;
IVANOV, S.Z. prof., retsenzent; GRACHEVA, V.S., red.

[Sugar-beet growing] Sveklovodstvo. Izd.3., perer. Moskva, Kolos, 1964. 307 p. (MIRA 17:10)

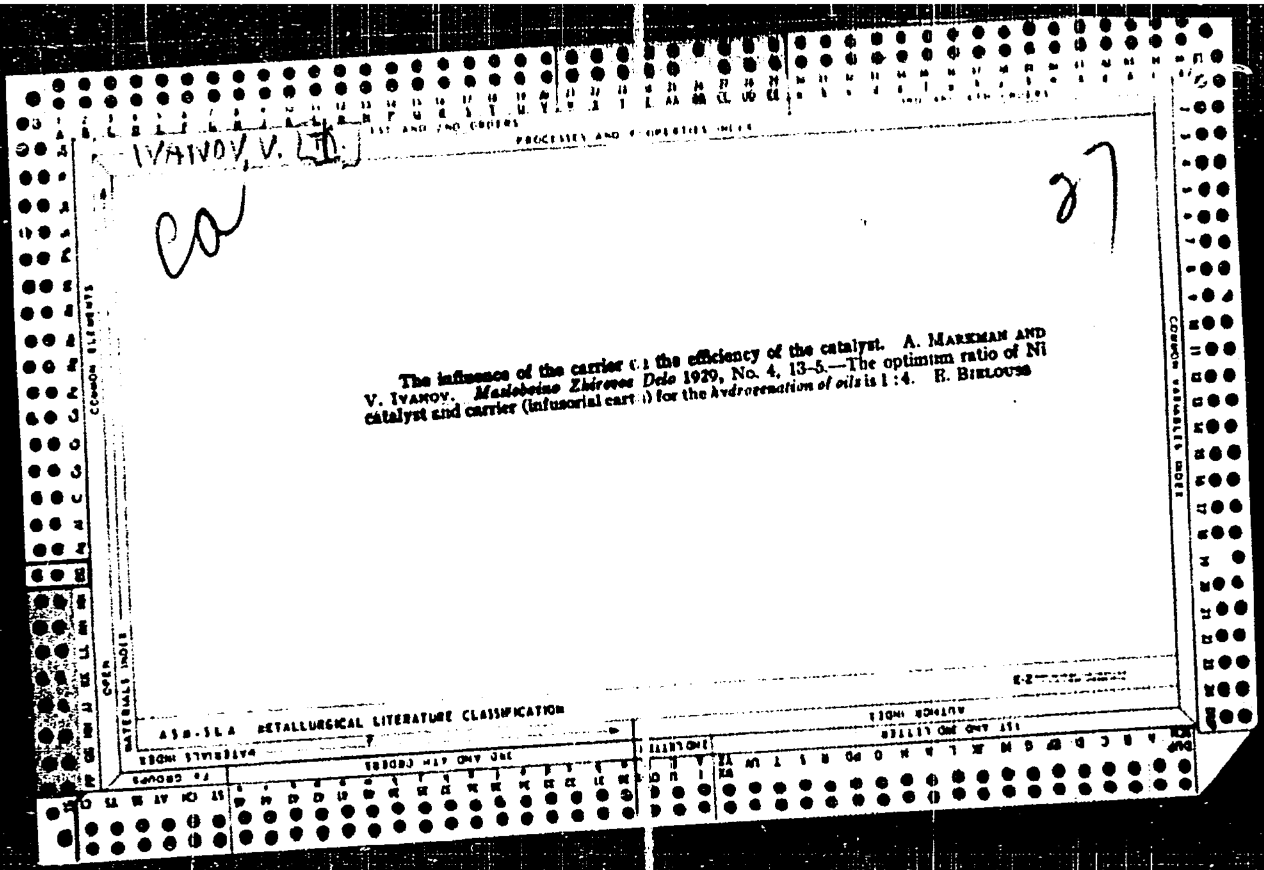
ANYUSHKIN, Ye.S.; IVANOV, S.Z.

Periodicals on sugar manufacture. Sakh.prom. 38 no.1:77 Ja '64.
(MIRA 17:2)

IVANOV, S.Z., prof.

The Robert diffusion in Russia and in the Soviet Union. Listy cukrovar 80 no.8:201-204 Ag'64

1. Chair of Saccharides, Institute of Technology, Voronezh.



IVANOV, V. I.

Ca

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The influence of the carrier on the efficiency of the catalyst. A. MARKMAN AND V. IVANOV. *Maslobeino Zhirovoe Delo* 1929, No. 4, 13-5.—The optimum ratio of Ni catalyst and carrier (infusorial earth) for the *hydrogenation of oils* is 1:4. R. BIELOUSS

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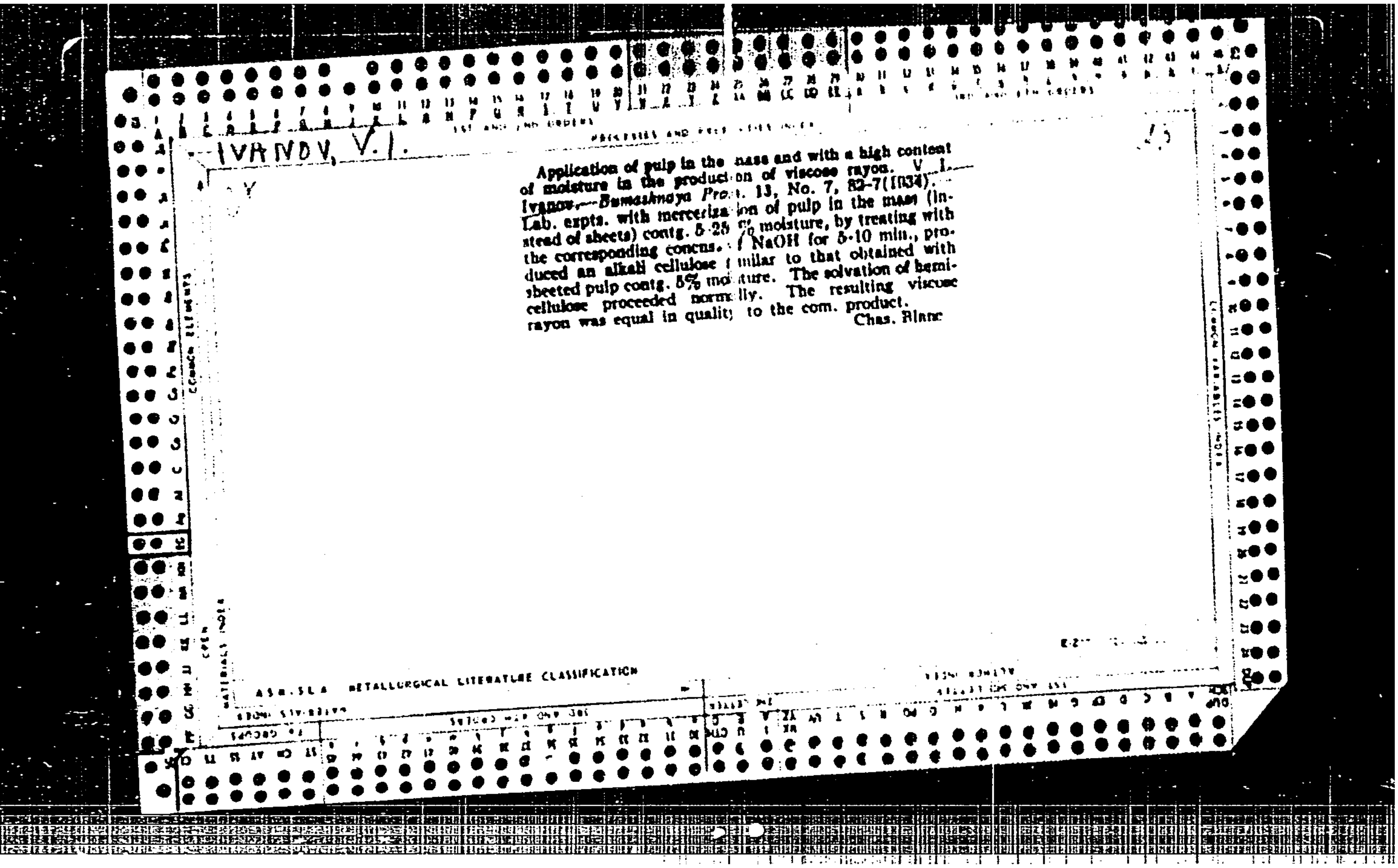

IVANOV, V. I.

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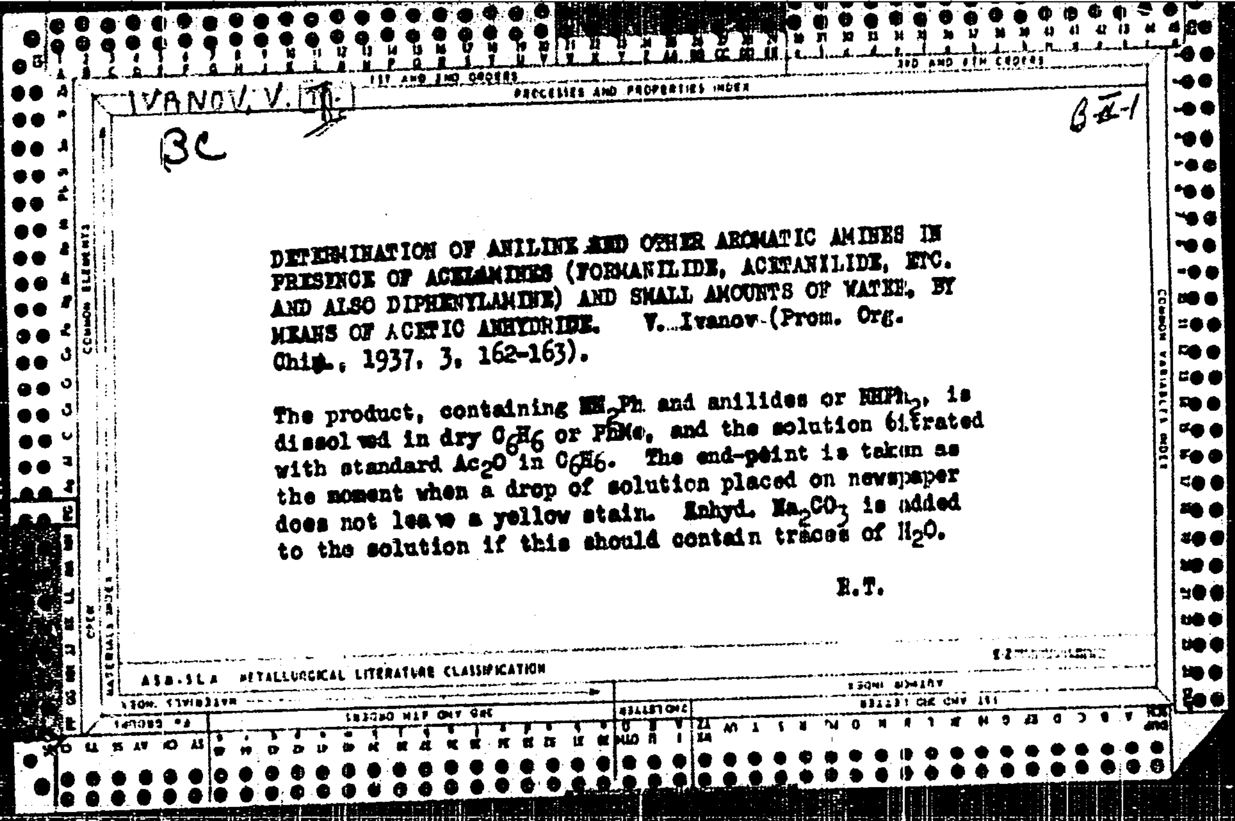
Application of pulp in the mass and with a high content of moisture in the production of viscose rayon. V. I. Ivanov.—*Bumashnaya Prom.* 13, No. 7, 82-7(1934). Lab. expts. with mercerization of pulp in the mass (instead of sheets) contg. 5-25% moisture, by treating with the corresponding concns. of NaOH for 5-10 min., produced an alkali cellulose similar to that obtained with sheeted pulp contg. 5% moisture. The solvation of hemicellulose proceeded normally. The resulting viscose rayon was equal in quality to the com. product.

Chas. Blanc

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



IVANOV, V. T.

3C

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PROCESSES AND PROPERTIES INDEX

DETERMINATION OF ANILINE AND OTHER AROMATIC AMINES IN PRESENCE OF ACYLAMINES (FORMANILIDE, ACETANILIDE, ETC. AND ALSO DIPHENYLAMINE) AND SMALL AMOUNTS OF WATER, BY MEANS OF ACETIC ANHYDRIDE. V. Ivanov (Prom. Org. Chim., 1937, 3, 162-163).

The product, containing NH_2Ph and anilides or $NHPh_2$, is dissolved in dry C_6H_6 or PhMe, and the solution titrated with standard Ac_2O in C_6H_6. The end-point is taken as the moment when a drop of solution placed on newspaper does not leave a yellow stain. Anhyd. Na_2CO_3 is added to the solution if this should contain traces of H_2O.

E.T.

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IVANOV, V. M.

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6-II-1

DETERMINATION OF o- IN m-NITRO-p-TOLUIDINE. V. Ivanov (Prom. Org. Chim., 1937, 3, 163-164).

The sum of o- (I) and m-nitro-p-toluidine (II) in a 0.5 g. sample is determined by titration with 0.1n-$NaNO_2$. A second sample is reduced to the diamine, and the titration repeated. The % content of (I) is given by 100x/a, where a is the no. of c.c. of $NaNO_2$ used in the first, and a + x the no. of c.c. in the second titration.

R.T.

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IVANOV, V. II.

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25

The influence of moisture on the properties of textile fabrics. V. Ivanov. *Khlopchatobumazhnaya Prom.* 7, No. 3, 24-6(1937); *Chem. Zentr.* 1937, II, 2004.—Curves showing the absorption of water by viscose, mercerized cotton, cotton and acetate rayon are reported. Viscose shows the greatest ability to absorb water; at 80% relative humidity viscose absorbs 25% water, cotton 12-13% and acetate rayon still less. The strength of viscose fibers at 80% relative humidity is only 68% of its value at 40% humidity. Other properties of viscose are similarly affected by moisture. It is recommended that a relative humidity of 45-50% be maintained during spinning and 60-65% in the weaving rooms. M. G. Moore

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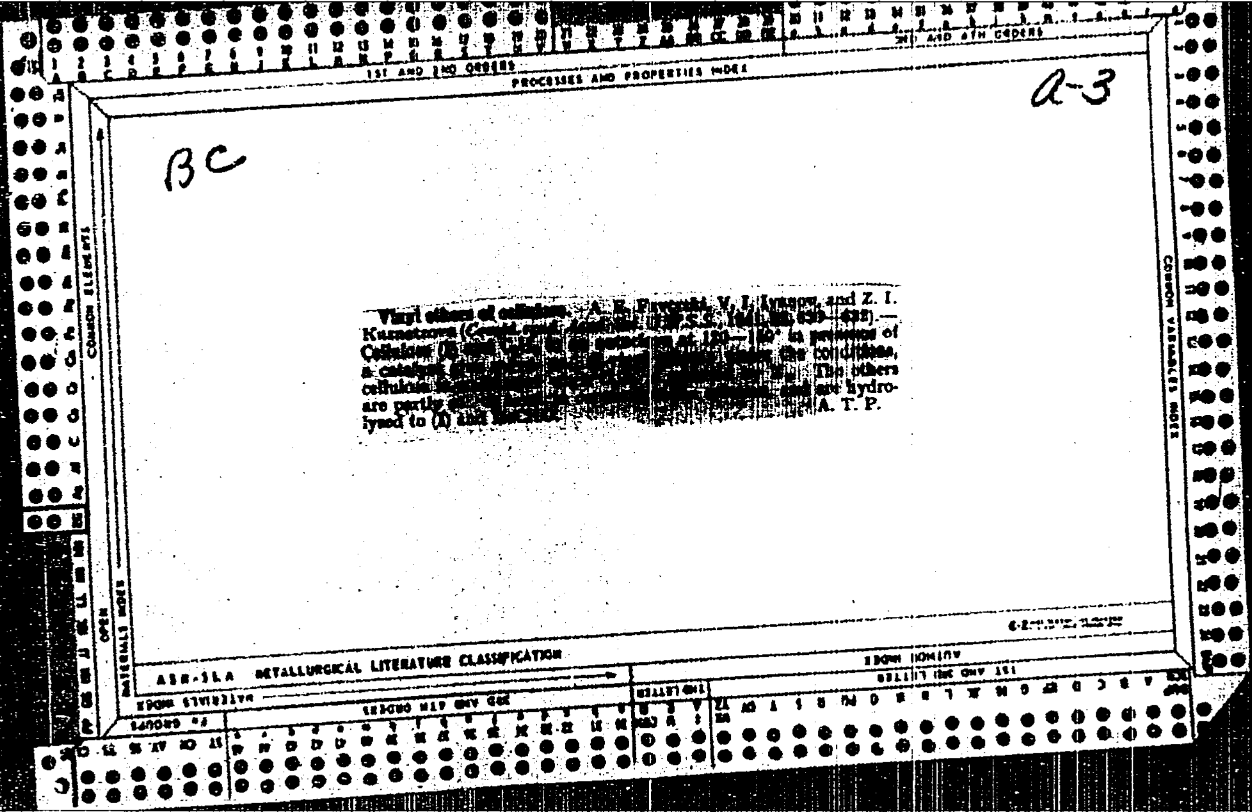
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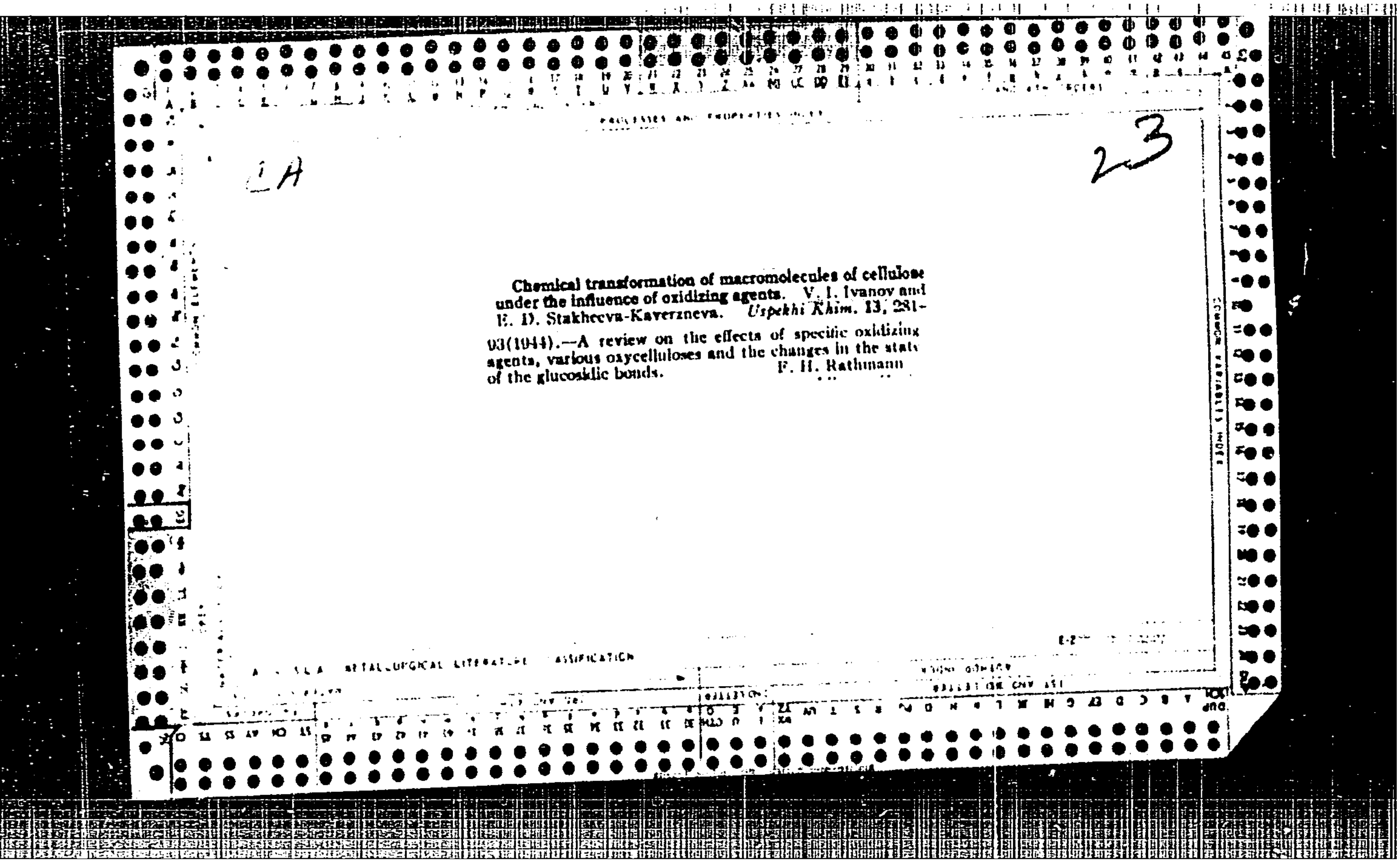
a-3

BC

Vinyl ethers of cellulose. A. E. Favorskii, V. I. Ivanov, and Z. I. Kuznetsova (Compt. rend. [illegible] U.R.S.S. 1940, 26, 639—[illegible]).— [illegible] at 120—150° in presence of Cellulose (I) [illegible] the conditions, a catalyst [illegible]. The ethers cellulose [illegible] and are hydro- are partly [illegible] A. T. P. lysed to (I) and [illegible]



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1A

23

Chemical transformation of macromolecules of cellulose under the influence of oxidizing agents. V. I. Ivanov and E. D. Stakheeva-Kaverzneva. *Uspekhi Khim.* 13, 281-93(1944).—A review on the effects of specific oxidizing agents, various oxycelluloses and the changes in the state of the glucosidic bonds. F. H. Rathmann

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a-5

Cleavage of the carbon of α-methyl-d-glucopyranoside in ammoniacal copper hydroxide solution. V. I. Ivanov (with K. M. Sokova) (Compt. rend. Acad. Sci. U.R.S.S., 1944, 44, 176—177).—The discovery that this compound is oxidised by atm. O_2 in cuprammonium hydroxide solution to α'-methoxy-α-hydroxymethyldiglycollic acid suggests that cellulose undergoes a similar degradation in Schweitzer's reagent. R. C. M.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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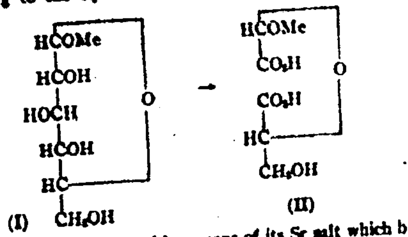
Ca

10

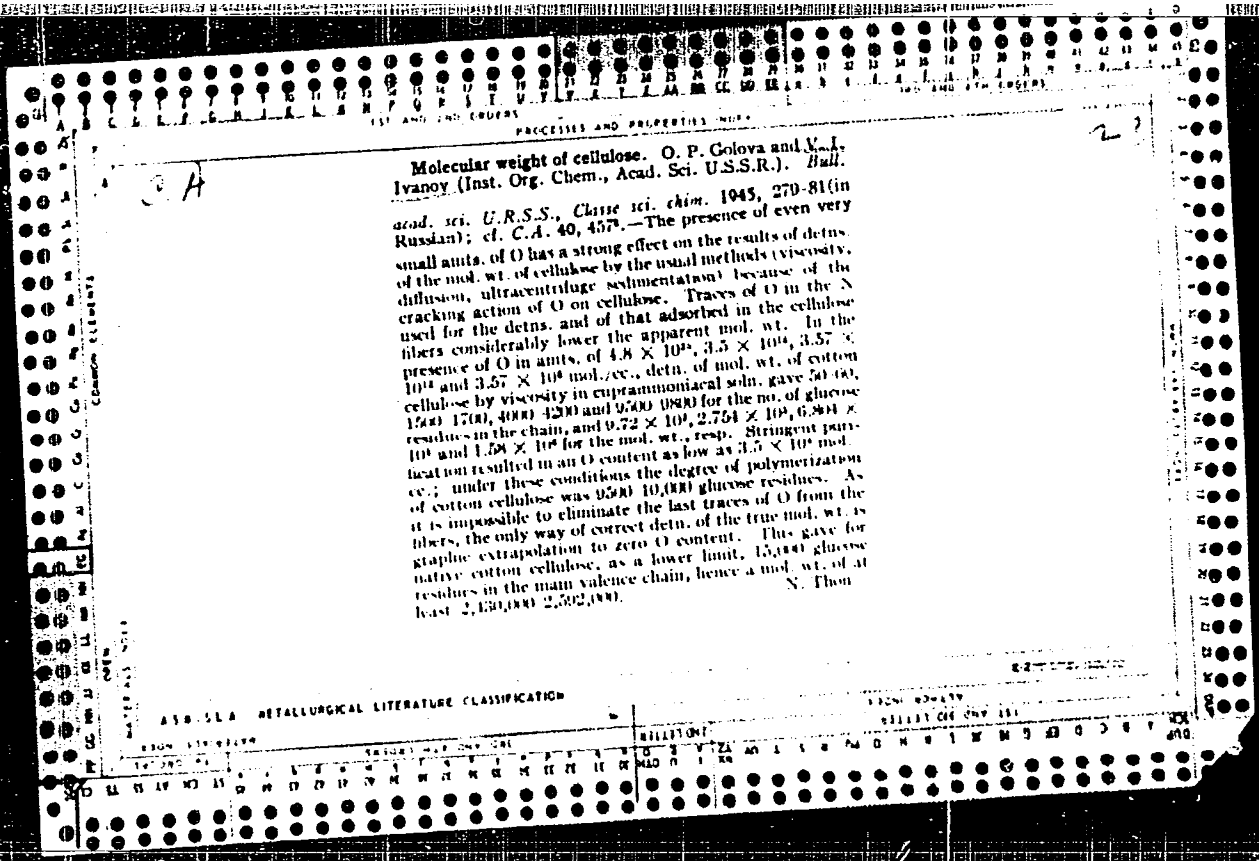
Cleavage of the C chain of α-methyl d-glucopyranoside in ammoniacal cupric solution. V. I. Ivanov and K. M. Sokova. *Doklady Akad. Nauk S. S. S. R.* 42, 170-81 (1944); *Compt. rend. acad. sci. U. R. S. S.* 42, 176-7(1944)(in English).—Oxidation by atm. O of *α-Me d-glucopyranoside* (I), in NH_3-$Cu(OH)_2$ soln. proceeds according to the equation



(I) (II)

Isolation of II is effected by means of its Sr salt which by hydrolysis and subsequent oxidation with Br is converted into oxalic and glyceric acids. Since I is an analog of the structural unit of cellulose it is conjectured that in the process involving the soln. of the latter in Schweitzer's reagent similar oxidations take place. L. Kuhn

A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION



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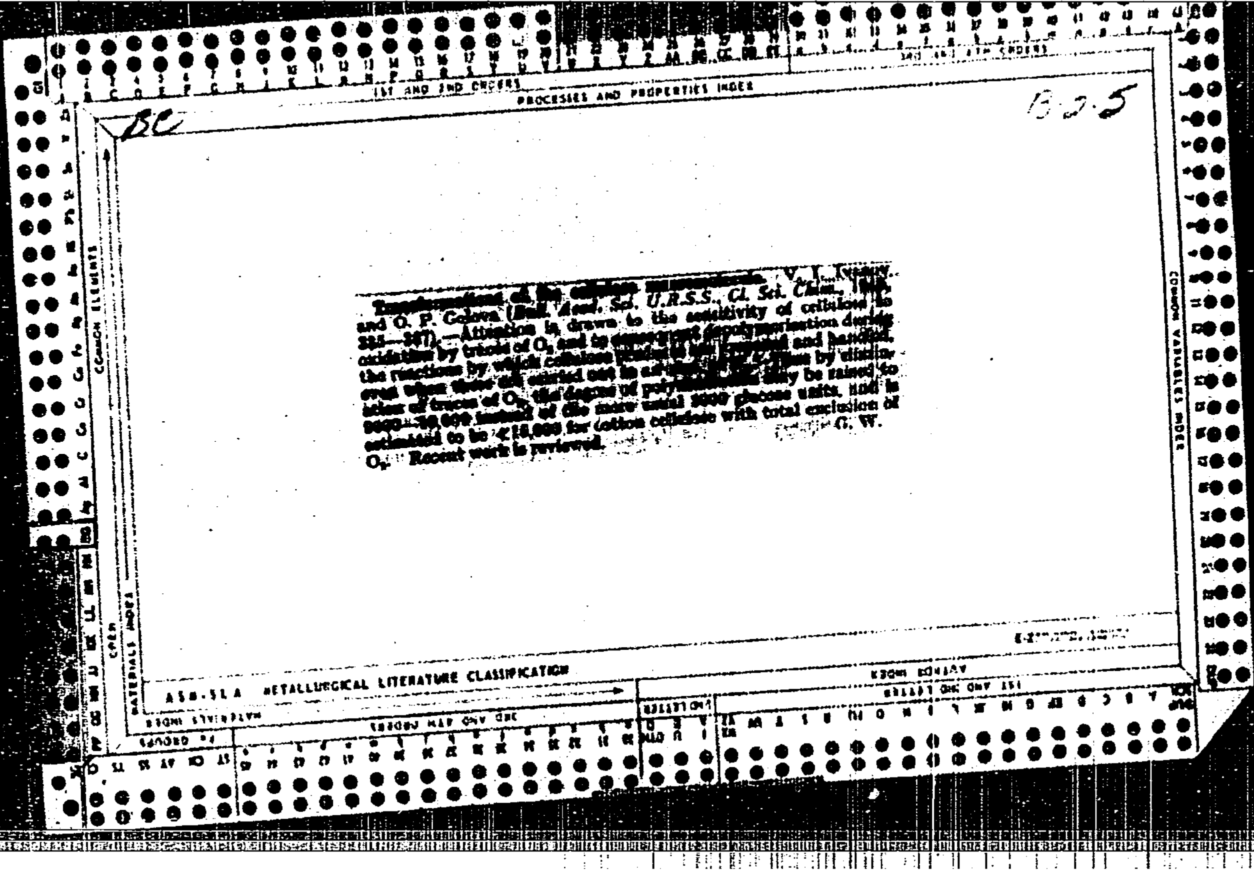
3A

2

Molecular weight of cellulose. O. P. Golova and V. I. Ivanov (Inst. Org. Chem., Acad. Sci. U.S.S.R.). *Bull. acad. sci. U.R.S.S., Classe sci. chim.* 1945, 270-81(in Russian); cf. *C.A.* 40, 457⁹.—The presence of even very small amts. of O has a strong effect on the results of detns. of the mol. wt. of cellulose by the usual methods (viscosity, diffusion, ultracentrifuge sedimentation) because of the cracking action of O on cellulose. Traces of O in the N used for the detns. and of that adsorbed in the cellulose fibers considerably lower the apparent mol. wt. In the presence of O in amts. of 4.8×10^{15}, 3.5×10^{14}, 3.57×10^{14} and 3.57×10^{8} mol./cc., detn. of mol. wt. of cotton cellulose by viscosity in cuprammoniacal soln. gave 50-60, 1500-1700, 4000-4200 and 9500-9800 for the no. of glucose residues in the chain, and 9.72×10^{3}, 2.754×10^{5}, 6.804×10^{5} and 1.58×10^{6} for the mol. wt., resp. Stringent purification resulted in an O content as low as 3.5×10^{8} mol./cc.; under these conditions the degree of polymerization of cotton cellulose was 9500-10,000 glucose residues. As it is impossible to eliminate the last traces of O from the fibers, the only way of correct detn. of the true mol. wt. is graphic extrapolation to zero O content. This gave for native cotton cellulose, as a lower limit, 15,000 glucose residues in the main valence chain, hence a mol. wt. of at least 2,430,000-2,592,000. N. Thon

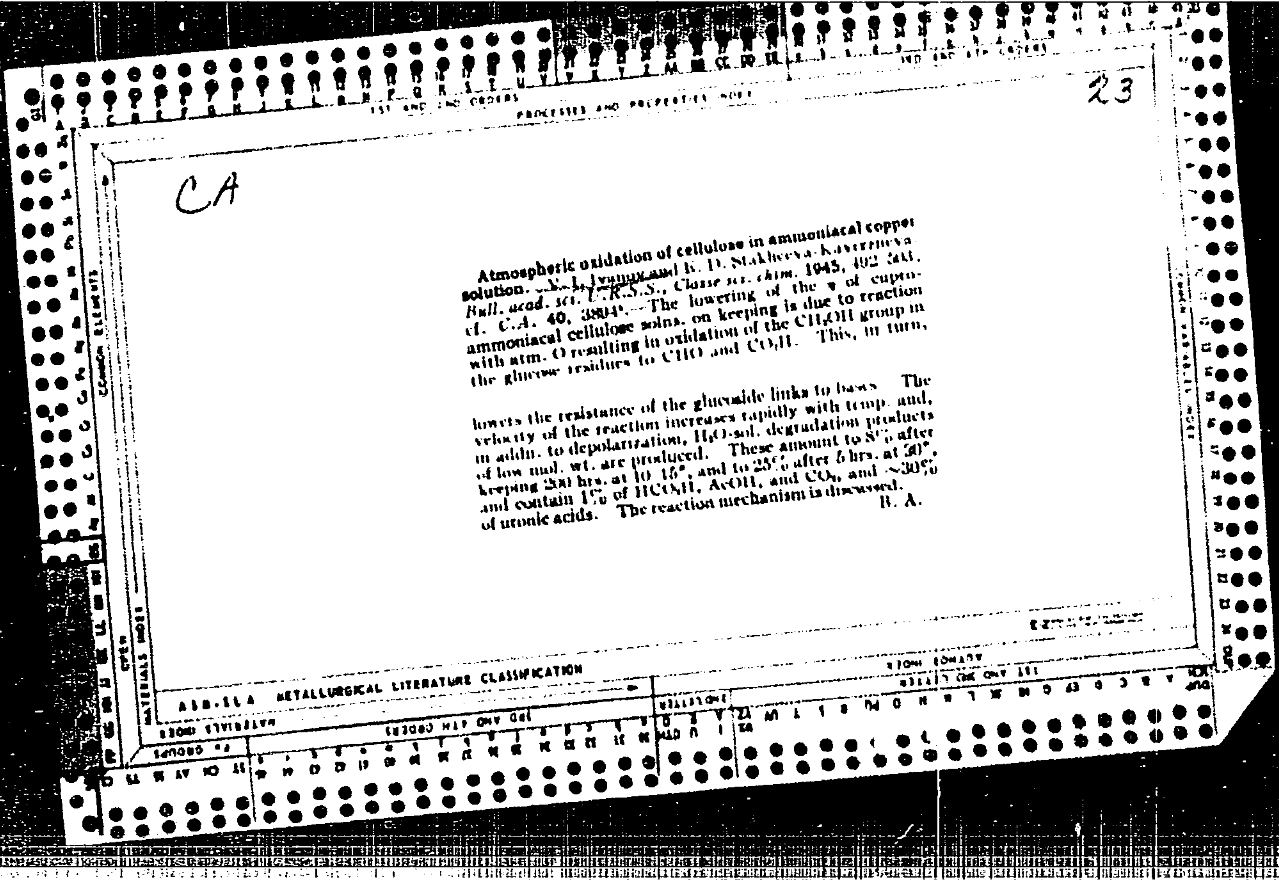
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION


1ST AND 2ND ORDERS
PROCESSES AND PROPERTIES INDEX
3RD AND 4TH ORDERS
COMMON ELEMENTS
CHEM
MATERIALS INDEX
COMMON VARIABLES INDEX
AUTHOR INDEX
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

BC

B-2-5

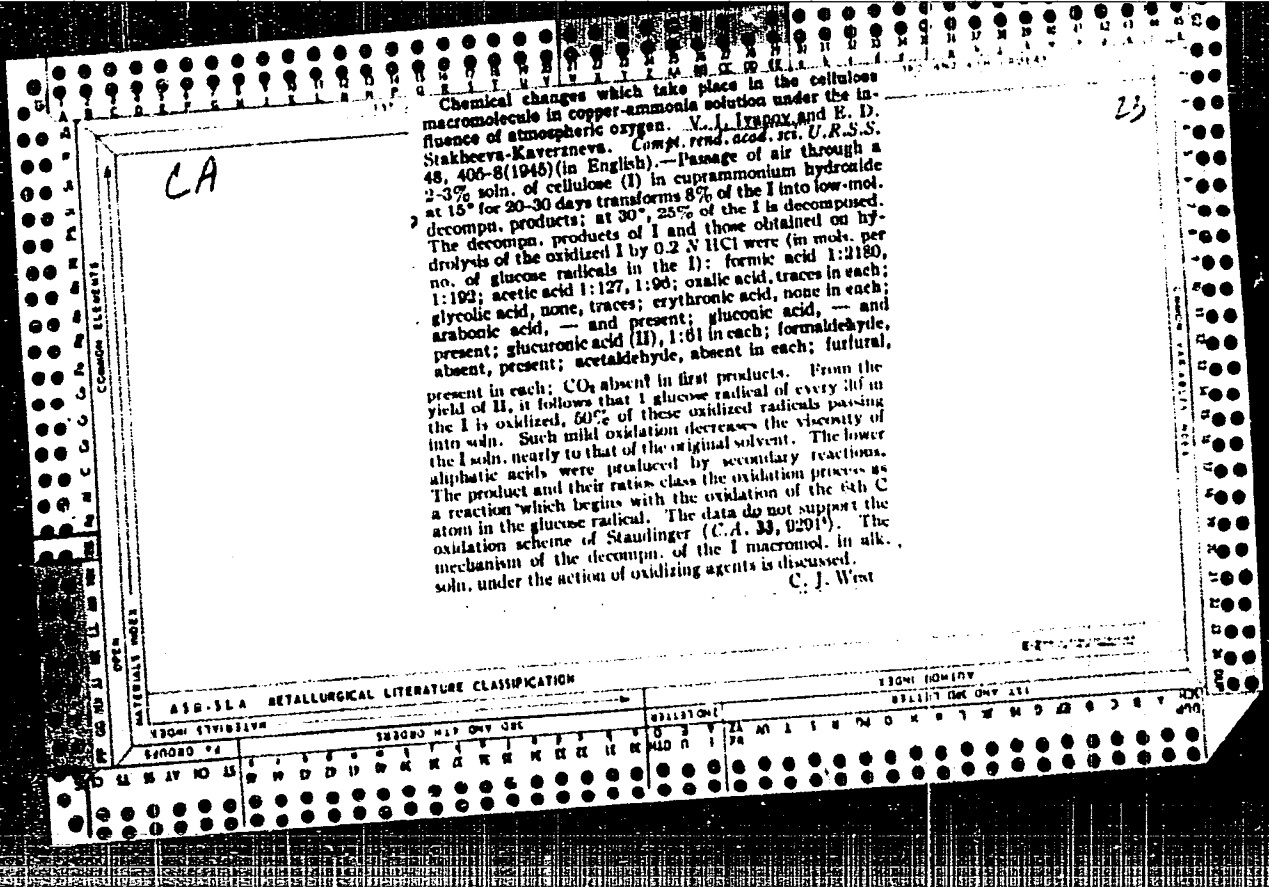
Transformations of the cellulose macromolecule. V. I. Ivanov and O. P. Golova (Bull. Acad. Sci. U.R.S.S., Cl. Sci. Chim., 1945, 385—387).—Attention is drawn to the sensitivity of cellulose to oxidation by traces of O_2 and to consequent depolymerisation during the reactions by which cellulose [illegible] and handled. [illegible] by similar [illegible] even when these are carried out in an [illegible] may be raised to [illegible] absence of traces of O_2, the degree of poly[illegible] usual 3000 glucose units, and is 9000—30,000 instead of the more usual [illegible] estimated to be <14,000 for cotton cellulose with total exclusion of O_2. Recent work is reviewed. G. W.


1ST AND 2ND ORDERS
PROCESSES AND PROPERTIES INDEX
AID-SLA METALLURGICAL LITERATURE CLASSIFICATION

23

CA

Atmospheric oxidation of cellulose in ammoniacal copper solution. V. I. Ivanov and K. D. Stakheeva-Kaverzneva. *Bull. acad. sci. U.R.S.S., Classe sci. chim.* 1945, 192-201; cf. *C.A.* **40**, 3804^4.—The lowering of the η of cuproammoniacal cellulose solns. on keeping is due to reaction with atm. O resulting in oxidation of the CH_2OH group in the glucose residues to CHO and CO_2H. This, in turn, lowers the resistance of the glucoside links to bases. The velocity of the reaction increases rapidly with temp. and, in addn. to depolarization, H_2O-sol. degradation products of low mol. wt. are produced. These amount to 8% after keeping 200 hrs. at 10-15°, and to 25% after 6 hrs. at 30°, and contain 1% of HCO_2H, AcOH, and CO_2, and ~30% of uronic acids. The reaction mechanism is discussed.
B. A.



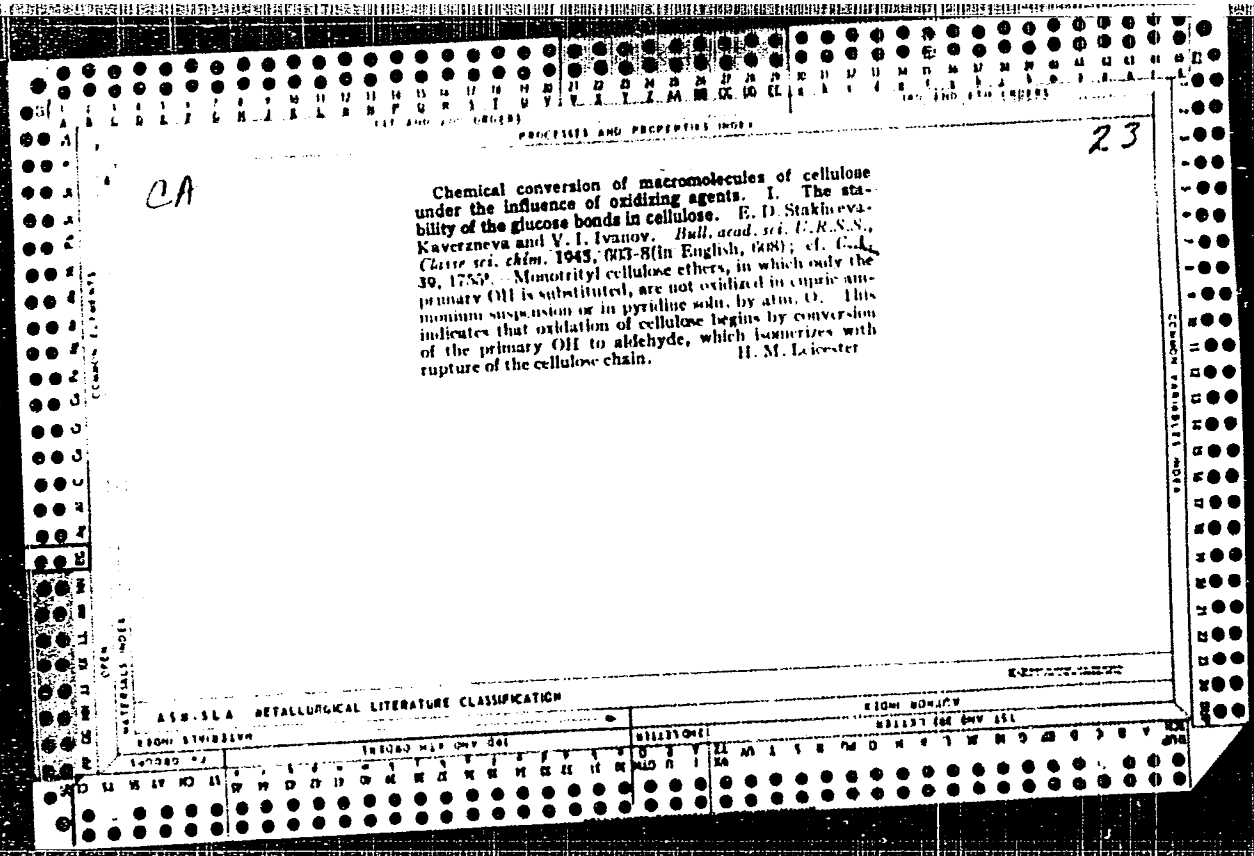
CA

23

Chemical changes which take place in the cellulose macromolecule in copper-ammonia solution under the influence of atmospheric oxygen. V. I. Ivanov and E. D. Stakheeva-Kaverzneva. *Compt. rend. acad. sci. U.R.S.S.* 48, 406-8(1945)(in English).—Passage of air through a 2-3% soln. of cellulose (I) in cuprammonium hydroxide at 15° for 20-30 days transforms 8% of the I into low-mol. decompn. products; at 30°, 25% of the I is decomposed. The decompn. products of I and those obtained on hydrolysis of the oxidized I by 0.2 N HCl were (in mols. per no. of glucose radicals in the I): formic acid 1:2180, 1:193; acetic acid 1:127, 1:96; oxalic acid, traces in each; glycolic acid, none, traces; erythronic acid, none in each; arabonic acid, — and present; gluconic acid, — and present; glucuronic acid (II), 1:61 in each; formaldehyde, absent, present; acetaldehyde, absent in each; furfural, present in each; CO_2 absent in first products. From the yield of II, it follows that 1 glucose radical of every 30 in the I is oxidized, 60% of these oxidized radicals passing into soln. Such mild oxidation decreases the viscosity of the I soln. nearly to that of the original solvent. The lower aliphatic acids were produced by secondary reactions. The product and their ratios class the oxidation process as a reaction which begins with the oxidation of the 6th C atom in the glucose radical. The data do not support the oxidation scheme of Staudinger (C.A. 33, 9201^9). The mechanism of the decompn. of the I macromol. in alk. soln. under the action of oxidizing agents is discussed.

C. J. West

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



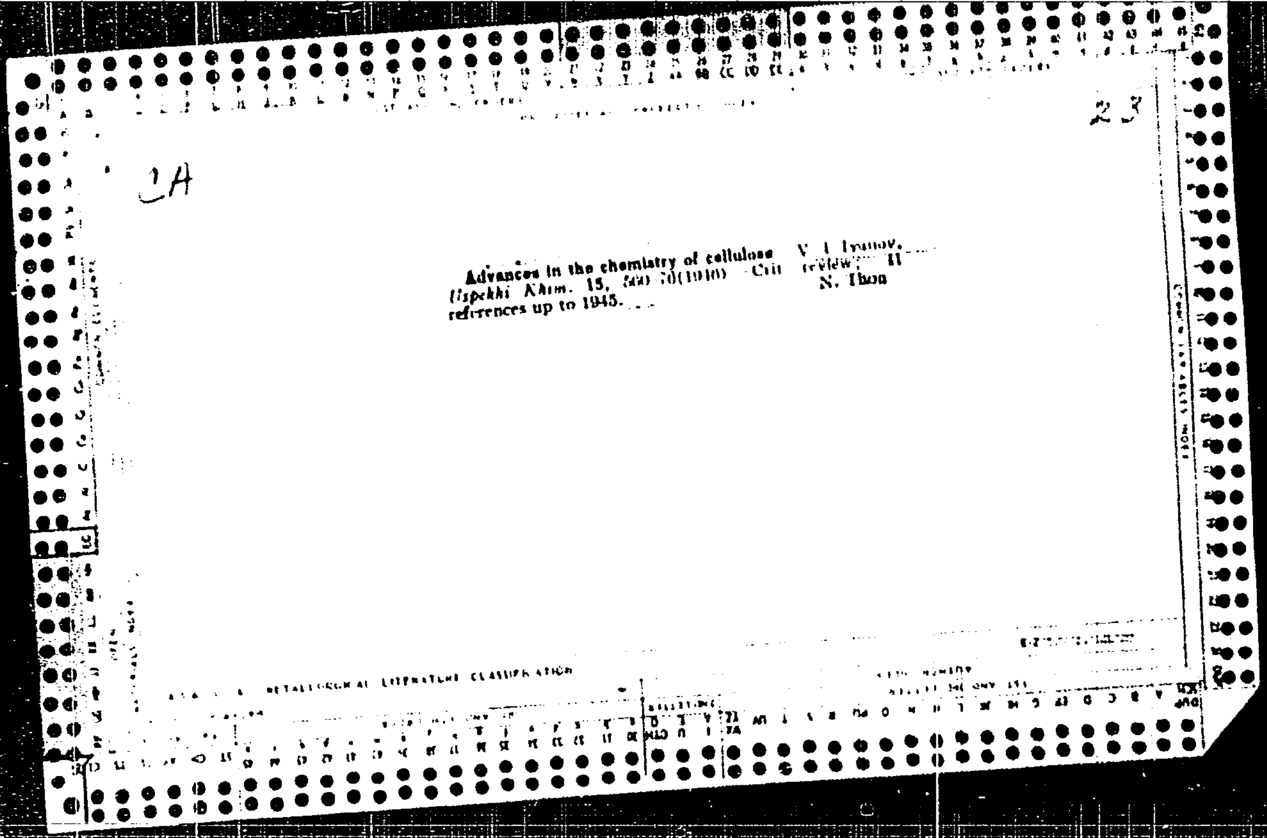
PROCESSES AND PROPERTIES INDEX

23

CA

Chemical conversion of macromolecules of cellulose under the influence of oxidizing agents. I. The stability of the glucose bonds in cellulose. E. D. Stakheeva-Kaverzneva and V. I. Ivanov. *Bull. acad. sci. U.R.S.S., Classe sci. chim.* **1945**, 603-8(in English, 608); cf. C.A. 39, 1755^9.—Monotrityl cellulose ethers, in which only the primary OH is substituted, are not oxidized in cupric ammonium suspension or in pyridine soln. by atm. O. This indicates that oxidation of cellulose begins by conversion of the primary OH to aldehyde, which isomerizes with rupture of the cellulose chain. H. M. Leicester

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



2A

23

Advances in the chemistry of cellulose V. I. Ivanov. Uspekhi Khim. 15, [illegible]-70(1946). Crit. review; 11 references up to 1945. N. Thon

METALLURGICAL LITERATURE CLASSIFICATION

23

CA

Inhibition of the oxidative decomposition of cellulose. O. P. Golova, V. I. Ivanov, and I. I. Nikolaeva. *Doklady Akad. Nauk S.S.S.R.* 58, 599-602(1947); *Chem. Zentr.* (Russian Zone Ed.) 1948, I, 579-80; cf. *C.A.* 42, 6100i.—Viscosity measurements have shown that, when O is passed into a Cu-NH_3 soln. of cellulose, a rapid reduction of the degree of polymerization (D.P.) of the cellulose from 10,000 to 100-120 takes place. Further breakdown of the mol. chain is slow. The process was interrupted at the point at which the reaction began to slow down by removing the NH_3 *in vacuo* and blowing A through the soln. The low-mol. products were then sepd. by extn. with water. When the water-insol. portion was again dissolved in the Cu-NH_3 soln. and oxidized with atm. O, the viscosity again decreased. The D.P. of the water-insol. fraction changed but little during the 2nd or 3rd stage of the oxidation, values of 100 and 80 being reported. Assuming that the low-mol. products formed were responsible for inhibiting the further decompn. of the cellulose, expts. were carried out to det. the effect of adding glucose and cellobiose to the Cu-NH_3 soln. A definite inhibiting effect was observed at a mol. ratio of glucose to cellulose of ~ 5000. The ratio for cellobiose was ~ 2500. Even benzaldehyde had an inhibiting effect. The water-sol. degradation products of cellulose had a slight inhibiting effect. It is supposed that, in nature, where the labile cellulose chain remains in the plant tissue, the observed inhibiting action is due to readily oxidized substances which are responsible for the formation of lignin, a substance always present with cellulose. Coniferin and coniferyl alcohol are such substances. Both of these compds., when added to a Cu-NH_3 soln. of cellulose, inhibited its oxidative decompn. M. G. Moore

IVANOV, V.I.

Ivanov, V.I. "New developments in cellulose chemistry," in symposium: Issledovaniya v oblaste tsellulozy i yeye sputnikov, Moscow-Leningrad, 1948, p. 5-26 - Bibliog: p. 25-26

SO: U-2888, Letopis Zhurnal'nykh Statey, No. 1, 1949

IVANOV, V. I.

Golova, O. P., Ivanov, V. I., and Nikolayeva, I. I. "Molecular weight of celluose and the appearance of frictional action during its acidifying decomposition," in symposium: Issledovaniya v oblasti tsellyulozy i yeye sputnikov, Moscow-Leningrad, 1948, p. 27-35 - Bibliog: 10 items.

SO: U-2888, Letopis Zhurnal'nykh Statey, No. 1, 1949

IVANOV, V.I.

Ivanov, V. I. and Kaverzneva, Ye. D. "Reaction capacity of hydroxyl radicals of celulose and the extraction of 6- desoxy-cilluloses," in symposium: Issledovaniya v oblasti tsellyulozy i yeye sputnikov, Moscow-Leningrad, 1948, p. 56-63 - Bibliog: 5 items

SO: U-2888, Letopis Zhurnal'nykh Statey, No.1, 1949

IVANOV, V.I.

Ivanov, V.I. and Kaverzneva, Ye. D. "Acidification of cellulose in a cupric-ammonium solution," in symposium: Issledovaniya v oblasti tsellyulozy i yeye sputnikov, Moscow-Leningrad, 1948, p. 81-87 - Bibliog: p. 86-87

SO: U-2888, Letopis Zhurnal'nykh Statey, No. 1. 1949

IVANOV, V. I. IA 55/49T18

USSR/Chemistry - Glycols
Chemistry - Alcohols

Nov 48

"Oxidation-Reduction of Alpha-Glycols and Polyatomic Alcohols Through the Effect of an Ammonia Solution of Silver Hydroxide," V. I. Ivanov, K. M. Sokova, 1½ pp

"Dok Ak Nauk SSSR" Vol LXIII, No 3

Concludes that, during action of an ammonia solution of silver hydroxide on alpha-glycols and polyatomic alcohols, oxidation occurs in carbon atoms containing hydroxyl groups up to a carboxyl group with a simultaneous rupture in the carbon-carbonic bond. Reaction is negative in beta-glycols. Submitted by Acad A. N. Nesmeyanov 2 Jul 48.

[redacted] 55/49T18

IVANOV, V. I.

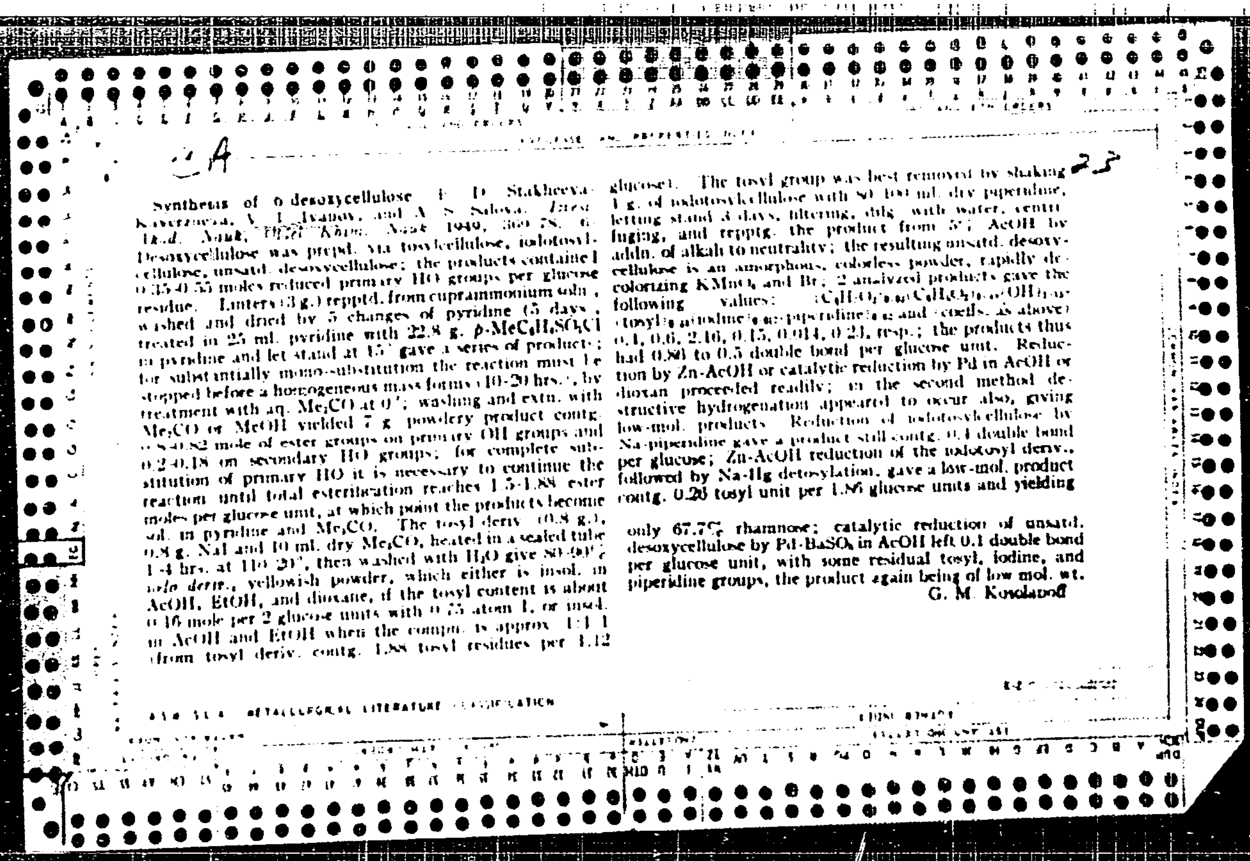
GOLOVA, O.P., IVANOV,V.I., KORSHAK,V.V., doktor khimicheskikh nauk, redaktor; SHEVCHENKO, G.N., tekhnicheskiy redaktor.

[Molecular weight of cellulose] O molekuliarnom vese tselliulozy. Moskva, Izd-vo Akad. nauk SSSR, 1949. 114 p. (MLRA 8:8)
(Cellulose)

Ivanov, V.I.

[illegible] of the macromolecule of cellulose in [illegible]

[illegible] suggested that phys-
[illegible] of cellulose fibers cannot be used [illegible]
[illegible] of cellulose. G. M. R.


METALLURGICAL LITERATURE CLASSIFICATION

2A

23

Synthesis of 6-desoxycellulose. E. D. Stakheeva-Kaverzneva, V. I. Ivanov, and A. S. Salova. *Izvest. Akad. Nauk, Otdel. Khim. Nauk* 1949, 369-78. 6-Desoxycellulose was prepd. via tosylcellulose, iodotosylcellulose, unsatd. desoxycellulose; the products contained 0.35-0.55 moles reduced primary HO groups per glucose residue. Linters (3 g.) repptd. from cuprammonium soln., washed and dried by 5 changes of pyridine (5 days), treated in 25 ml. pyridine with 22.8 g. p-$MeC_6H_4SO_2Cl$ in pyridine and let stand at 15° gave a series of products; for substantially mono-substitution the reaction must be stopped before a homogeneous mass forms (10-20 hrs.), by treatment with aq. Me_2CO at 0°; washing and extn. with Me_2CO or MeOH yielded 7 g. powdery product contg. 0.84-0.82 mole of ester groups on primary OH groups and 0.2-0.18 on secondary HO groups; for complete substitution of primary HO it is necessary to continue the reaction until total esterification reaches 1.5-1.88 ester moles per glucose unit, at which point the products become sol. in pyridine and Me_2CO. The tosyl deriv. (0.8 g.), 0.8 g. NaI and 10 ml. dry Me_2CO, heated in a sealed tube 1-4 hrs. at 110-20°, then washed with H_2O give 80-90% *iodo deriv.*, yellowish powder, which either is insol. in AcOH, EtOH, and dioxane, if the tosyl content is about 0.16 mole per 2 glucose units with 0.75 atom I, or insol. in AcOH and EtOH when the compn. is approx. 1:1:1 (from tosyl deriv. contg. 1.88 tosyl residues per 1.12 glucose). The tosyl group was best removed by shaking 1 g. of iodotosylcellulose with 80-100 ml. dry piperidine, letting stand 3 days, filtering, dilg. with water, centrifuging, and reptg. the product from 5% AcOH by addn. of alkali to neutrality; the resulting unsatd. desoxycellulose is an amorphous, colorless powder, rapidly decolorizing $KMnO_4$ and Br; 2 analyzed products gave the following values: $(C_6H_7O_2)$ as $(C_6H_8O_4)$ as (OH) as (tosyl) as (iodine) as (piperidine) as and (coeffs. as above) 0.1, 0.6, 2.16, 0.15, 0.014, 0.23, resp.; the products thus had 0.80 to 0.5 double bond per glucose unit. Reduction by Zn-AcOH or catalytic reduction by Pd in AcOH or dioxan proceeded readily; in the second method destructive hydrogenation appeared to occur also, giving low-mol. products. Reduction of iodotosylcellulose by Na-piperidine gave a product still contg. 0.4 double bond per glucose; Zn-AcOH reduction of the iodotosyl deriv., followed by Na-Hg detosylation, gave a low-mol. product contg. 0.23 tosyl unit per 1.86 glucose units and yielding only 67.7% rhamnose; catalytic reduction of unsatd. desoxycellulose by Pd-$BaSO_4$ in AcOH left 0.1 double bond per glucose unit, with some residual tosyl, iodine, and piperidine groups, the product again being of low mol. wt.

G. M. Kosolapoff

IVANOV, V. I.

USSR/Chemistry - Synthesis Jul/Aug 49
Chemistry - Desoxycellulose

"Synthesis of 6-Desoxycellulose," Ye. D. Kaverzneva, V. I. Ivanov, A. S. Salova, Inst of Org Chem, Acad Sci USSR, 9½ pp

"Iz Ak Nauk SSSR, Otdel Khim Nauk" No 4

Describes different methods of preparing this compound, and shows that the highest degree of conversion of a primary alcohol into a methyl group with the lowest degree of destruction of the macromolecule is obtained by conducting the synthesis through the stage of unsaturated desoxyderivate of cellulose. Submitted 12 Jul 48.

63/49T10

CA

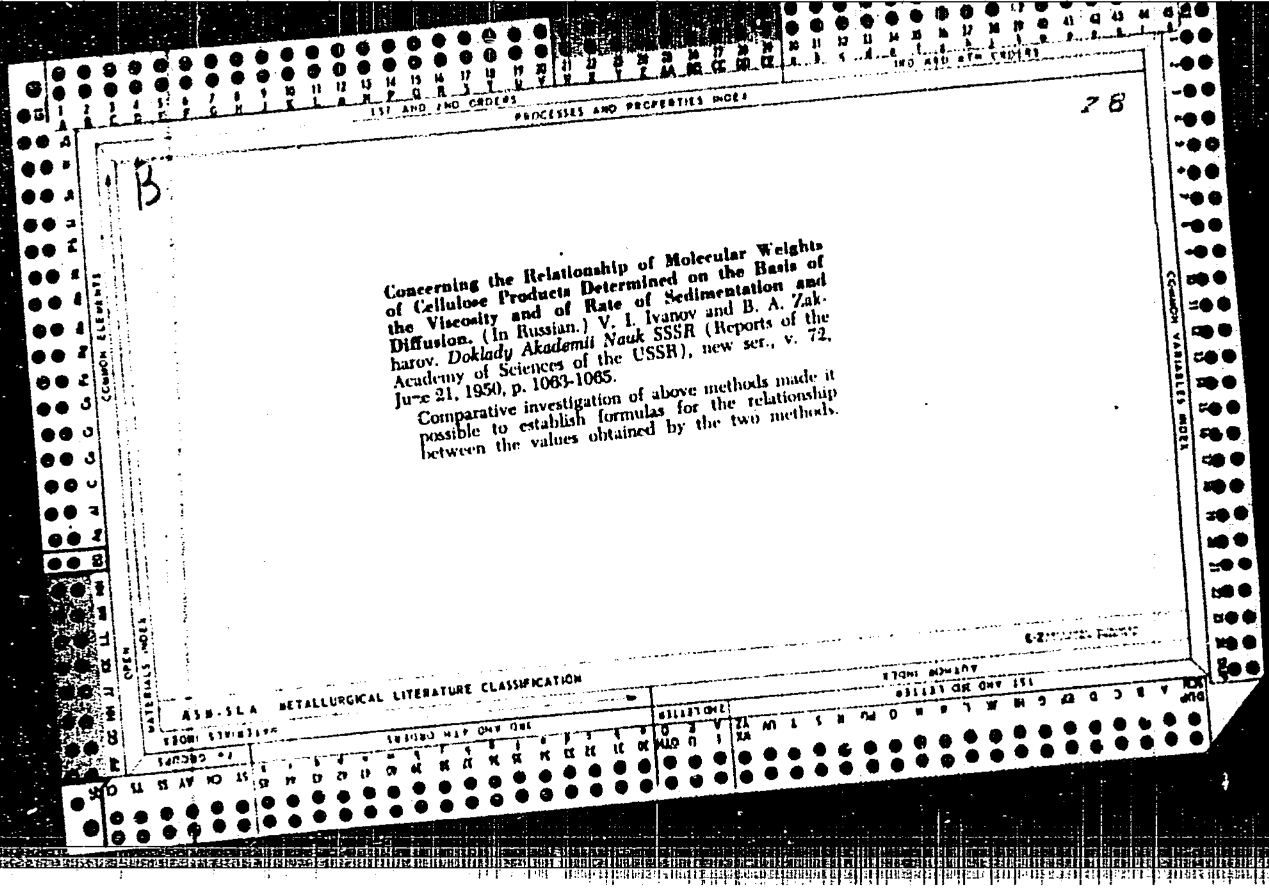
26

Calculation of the molecular weight of cellulose from the viscosity of its cuprammonium solutions. V. I. Ivanov, O. P. Golova, and B. A. Zakharov. *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1950, 408-11.—Discussion of the interpretation of viscometric data for cellulose, based on data of Schulz, *et al.* (*C.A.* 37, 5802^1) and of Golova and Ivanov (*C.A.* 40, 1653^9). J. P. Danehy

1951

IVANOV, V.I.

Plant tissues, an important source of raw material for organic products.
Vestnik Akad. Nauk S.S.S.R. 20, No.11, 83-92 '50. (MLRA 3:10)
(CA 47 no.18:9611 '53)


1ST AND 2ND ORDERS
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ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

28

B

Concerning the Relationship of Molecular Weights of Cellulose Products Determined on the Basis of the Viscosity and of Rate of Sedimentation and Diffusion. (In Russian.) V. I. Ivanov and B. A. Zakharov. *Doklady Akademii Nauk* SSSR (Reports of the Academy of Sciences of the USSR), new ser., v. 72, June 21, 1950, p. 1063-1065.

Comparative investigation of above methods made it possible to establish formulas for the relationship between the values obtained by the two methods.

IVANOV, V.I.

PHASE I TREASURE ISLAND BIBLIOGRAPHICAL REPORT AID 739 - I

Call No.: ATIC87727-A

BOOK
Author: IVANOV, V. I., Dr. of Tech. Sci.
Full Title: GIANT MOLECULES
Transliterated Title: Molekuly - giganty

PUBLISHING DATA
Originating Agency: Academy of Sciences, USSR. Committee for the Publication of Popular Scientific Literature (S. I. Vavilov, Academician, President of the Committee; P. F. Yudin, Corr. Mem. of the Academy, Deputy President). Series "Itogi i problemy sovremennoy nauki" (Results and Problems of Modern Science).
Publishing House: Publishing House of the Academy of Sciences, USSR
Date: 1951 No. pp.: 118 No. of copies: 5,000
Editorial Staff: Chief Editor: Korshak, V. V., Dr. of Chem. Sci.

PURPOSE: The book is intended for a wide range of educated but non-specialist readers.

TEXT DATA
Coverage: This monograph presents a brief survey of the achievements of scientists in their study of the chemical composition, structure, and physical and chemical properties of natural and synthetic substances of high molecular weight. These substances differ in many respects, but have one characteristic in common: they are all composed of "giant" molecules. The booklet contains examples of the use in the national economy of articles manufactured from

23

CA

Chemical transformations of the macromolecule of cellulose under the action of oxidizing agents. VI. The presence in oxycelluloses of the groupings of carbonic esters and - their effect on the determination of uronic carboxylic groups. E. D. Kaverzneva, V. I. Ivanov, and A. S. Salova. *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1952, 183-9; cf. *ibid.* 1951, 782.—The results of detn. of total and uronic carboxyl groups in oxycelluloses (I) do not agree when products oxidized by NaOCl in acid or neutral media are compared. The cause for the deviation lies in participation of lactonized uronic carboxyls and the presence of small amts. of carbonic esters. The latter are very unstable and are

readily hydrolyzed by dil. alkalies in the cold or by acids on warming; these groups may be responsible for low stability of I produced by acidic oxidation. Boiling pure cotton with 12% HCl leads to evolution of but 0.04% CO_2 (by wt.). Similarly treated uronic compds. liberate CO_2 rather slowly and do not affect detns. such as those of uronic acids which can be completed by refluxing 5 hrs. The evolution of CO_2 from such treatment of I shows a distinct break after 5 hrs., and the slow continuing reaction is almost absent in specimens prepd. in alk. medium. The purely mech. causes were shown to be inoperative in suitable expts. The carbonate unit can be formed by oxidation of the C atom adjacent to the O atom in the ring structure of the saccharide G. M. Kosolapoff

Journal of Applied Chemistry
May 1954
Fibers

(3)

Chemical transformations of the cellulose macromolecule by oxidants. VII. Chemical transformations of cellulose during its oxidation by sodium hypochlorite. E. D. Kaverzneva, V. I. Ivanov, and A. S. Salova (*Izvestia*, 1952, No. 4, 751—762).—Quantitative micromethods are described whereby it is established that the oxycelluloses formed by NaClO oxidation contain uronic and non-uronic -COOH, -CHO (on C_6), α-hydroxyketonic, lactone, and esterified -COOH groups; the products of acid and neutral oxidations are similar and differ from these of alkaline oxidation. Mechanism of oxidative breakdown of cellulose at different pH are outlined.

R. C. Murray

IVANOV, V. I.

[illegible] 235T23

USSR/Chemistry - Cellulose 11 Sep 52

"Primary Oxidation Changes in Cellulose Due to Hydrogen Peroxide," V.I. Ivanov, Ye. D. Kaverzneva, Z.I. Kuznetsova, Inst of Org Chem, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol 86, No 2, pp 301-304

The primary change in the simple members of the cellulose macromol during the action of hydrogen peroxide is conversion to a glucosone structure. Depending on the pH, the surrounding groups will undergo changes described in previous work. Presented by Acad A.N. Nesmeyanov.

235T23

GOLOVA, O.P.; IVANOV, V.I.; MAYAT, N.S.

Oxidative breakdown of polygalaturonic acid. Doklady Akad. Nauk S.S.S.R.
86, 1113-16 '52. (MLRA 5:11)
(CA 47 no.22:12251 '53)

Chemical transformation of the cellulose macromolecule under the action of oxidizing agents. VIII. Chemical changes of cellulose on oxidation with hydrogen peroxide. V. I. Ivanov, E. D. Stakheeva-Kaverzneva, and Z. I. Kuznetsova. *Bull. Acad. Sci. U.S.S.R., Div. Chem. Sci.* 1953, 47-53 (Engl. translation).—See C.A. 47, 10220d

[illegible]

IVANOV, V. I.

③ 6

Chemical transformations of cellulose macromolecules in oxidation. Transformation of cellulose in oxidation with hydrogen peroxide. V. I. Ivanov, E. D. Kaverzneva, and Z. I. Kuznetsova (*Izvestia*, 1953, No. 2, 374—384).—Oxidative degradation of cellulose by H_2O_2 is most intense at pH >11 or <4; processes similar to those with simple sugars occur: oxidation of CH_2OH groups to –CHO and –COOH, of –CHOH groups to =CO, ring-fission at the C_2-C_3 bond forming two –CHO or –COOH groups. Differences between the properties and compositions of the oxycelluloses produced by H_2O_2 and NaClO are discussed. R. C. MURRAY.

NK

IVANOV, V. I.

③ 5

Primary oxidative changes of cellulose under the effect of hydrogen peroxide. W. I. Iwanow, E. D. Kaversnjewa, and S. I. Kusnjetzowa. *Faserforsch. u. Textiltech.* 4, 179-4(1953). See *C.A.* 47, 10220*d*. F. E. Brauns

IVANOV, V.I. (Moskva); ZAKHAROV, B.A. (Moskva).

Development and progress of the osmemetric method for determination of the molecular weights of high molecular weight compounds. Usp.khim. 22 no.6: 686-711 Je '53. (MLRA 6:5)

(High molecular weight compounds)

STAKHEYEVA-KAVERZNEVA, Ye.D.; IVANOV, V.I.; SALOVA, A.S.

Chemical transformations in cellulose under the action of hypochlorite.
Bumazh. Prom. 28, No.7, 6-11 '53. (MLRA 6:7)
(CA 47 no.22:12799 '53)

V. I. IVANOV

(3)

Hydrogen peroxide bleaching of cellulose. E. D. Stakheeva-Kaverzneva, V. I. Ivanov, and Z. I. Kuznetsova. *Tekstil. Prom.* 14, no. 3, 31-4(1954).—Oxidation processes occurring in cellulose during H_2O_2 bleaching are discussed in detail. The decrease in viscosity (η) of bleached cellulose (detd. in cuprammonium) is dependent on the pH of the bleaching bath since this dets. the nature and the degree of oxidation of the macromol. Neutral medium yields celluloses contg. more aldehydic, ketonic, and dialdehydic groups than the alk. medium; being unstable in strong alkali these groups will considerably lower η. Optimum pH for H_2O_2 bleaching is 8-10; a higher pH favors the enolization of hydroxy ketones and hydroxy aldehydes, resulting in a low η.

Elisabeth Barnbash

MF
7-20-51

IVANOV, V. I.

15076e (Molecular Weight Distribution Functions of Cellulose and Its Derivatives.) **Funktsii raspredeleniia molekuliarnogo vesa tselliulozy i ee proizvodnykh.** V. I. Ivanov and B. A. Zakharov. *Bumazhnaia Promyshlennost'*, [illegible] Mar 1954, p. 5-10.

Fractionation curves for bamboo nitrocellulose in acid and alkaline conditions. Relation of composition by weight to degree of polymerization for nitrates of wood cellulose. Graphs. 23 ref.

USSR.

7437* Problem of the Quality of Cellulose for the Viscose Industry. K voprosu o kachestve tselliulozy dlia viskoznoi promyshlennosti. (Russian.) V. I. Ivanov. *Bumazhnaia Promyshlennost'*, v. 29, no. 12, Dec. 1954, p. 5-8.
Investigates the chemical behavior of cellulose in relation to alkaline and acidic media. Structural formulas. 12 ref.

IVANOV, V.I.

USSR/Chemistry of High Molecular Substances. F

Abs Jour: Ref Zhur - Khimiya, No. 8, 1957, 27081.

Author : Kaverzneva, Ye.D., Ivanov, V.I., Salova, A.S., Kist', S.A.

Inst : Academy of Sciences of USSR.

Title : Chemical Conversions of Cellulose Macromolecule under Influence of Oxidizers. Report 9. Chemical Conversions at Oxidation of Cellulose with Nitrogen Peroxide. Report 10. Oxidation of Low Molecular Compounds Containing Hydroxyls with Nitrogen Peroxide. Report 11. To The Question of Chemical Instability of Celluloses Oxidized with Nitrogen Peroxide.

Orig Pub: Izv. AN SSSR, Otd. khim. n., 1956, No. 3, 358 - 367; No. 5, 604 - 614.

Abstract: 9. The chemical conversion of cellulose (I)

Card 1/8

USSR/Chemistry of High Molecular Substances. F

Abs Jour: Ref Zhur - Khimiya, No. 8, 1957, 27081.

macromolecule under the influence of gaseous NO_2 were studied. 50 to 100 g of cotton I was oxidized with NO_2 (0.5 to 2.0 g of NO_2 per 1 g of I) 24 to 96 hours at about 20° without exchanging the gases in the reaction vessel. After washing with water and drying, the following functional groups were determined: common and uronic COOH, common CO, CHO, α-oxyketone groups, groupations of carbonate esters and of N-nitroester groups. It was shown that the action of NO_2 on I was not a specific reaction of oxidation of initial OH-s, but was always accompanied with the oxidation of secondary OH-s, because the present COOH groups had been formed not only at the C_6-atoms of carbon, but also in other places of the pyran cycle with its

Card 2/8

USSR/Chemistry of High Molecular Substances. F

Abs Jour: Ref Zhur - Khimiya, No. 8, 1957, 27081.

splitting. Aldehyde groups were nearly completely absent in freshly oxidized preparations, but there were many ketone groups (there were 19 ketone groups per 100 glucose radicals in the oxidation depth to 65 COOH groups). For the compounds and groupation of carbonate esters were not detected. Practically all N entered the nitroester groups. The experimental results were in accordance with the oxidation mechanism through intermediate formation of nitroesters and their following oxidizing saponification not only in the initial, but also in the secondary OH groups.

10. With a view to clear the oxidation mechanism of polyhydroxyl compounds with NO_2, the

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Abs Jour: Ref Zhur - Khimiya, No. 8, 1957, 27081.

of aldehyde groups in the untreated preparation in 2.5 years of storage was 1.41%, and it was only 0.18% in the preparation with blocked carbonyls. This indicates the great part of ketone groups in the dissociation process of V in the air. In view of the fact that there are no aldehyde groups in V, the instability of V can depend on the presence of COOH and a considerable content of ketone groups. But the rapid drop of viscosity in alkaline solutions of V cannot be explained by the influence of the COOH groups, because the natural uronic acids are stable in alkaline medium. The ketone groups appear to be the main cause of the dissociation under these conditions, which corresponds completely to the influence of these groups in glucosides and other

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[illegible]

KAVERZNEVA, Ye.D.; IVANOV, V.I.; SALOVA, A.S.

Chemical conversions of cellulose macromolecules caused by oxicizers. Part 10. Oxidation of low molecular weight compounds containing a hydroxyl group by nitrogen dioxide. Izv.AN SSSR,Otd. khim.nauk no.4:482-490 Ap '56. (MLRA 9:8)

1. Institut organicheskoy khimii imeni N.D. Zelinskogo Akademii nauk SSSR.
(Nitrogen oxides) (Carbohydrates) (Oxidation)

IVANOV-V.I.

5

2

Ion exchange on cellulose and its derivatives. V. I. Ivanov and N. Ya. Lenshina (N. D. Zelinskii Inst. Org. ~~Chem.,~~ Moscow). *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1956, 506-7.—Passage of Fe^{+++} or Ni^{++} ions through columns packed with cotton cellulose or oxidized cellulose contg. 50-280 meq. CO_2H/100 g. was studied. The results indicate ion-exchange properties due to the CO_2H groups present in the cellulose. However, Ni ions are absorbed from a neutral soln. strictly in accord with the CO_2H groups present, but the uptake of Fe^{+++} ions was about 50 meqs./100 g. regardless of the nature of the cellulose. Hence the Fe^{+++} requires a different mechanism of adsorption from that of the Ni^{++}. G. M. Kosolapoff

M. A. Voltz

1 copies

[illegible] In the presence of [illegible] yields 8-14% [illegible] drate cellulose heated in water [illegible] are side reactions hydrolysis, oxidation, and dehydration [illegible] The main path of the [illegible] destruction [illegible]

[illegible]

"Electrolytic interaction between cellulose and other organic compounds," a paper presented at the 9th Congress on the Chemistry and Physics of High Polymers, 28 Jan-2 Feb 57, Moscow, Organic Chemistry Inst.of Research .

B-3,084,395

IVANOV, V. I

62-1-17/21

AUTHORS: Kaverzneva, Ye. D.; Ivanov, V. I.; Krylova, G. A.

TITLE: Chemical Conversions of Cellulose during Activated Oxidation with Hypochlorite (Khimicheskiye prevrashcheniya tsellyulozy pri aktivirovannom okislenii gipokhloritom)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Khimicheskikh Nauk, 1957, No. 1, pp. 12-122 (U.S.S.R.)

ABSTRACT: Investigation was conducted to determine the effect of an activated oxidation process on the chemical conversions of cellulose in the presence of hypochlorite. Using urea in the role of activator, it was found that the chemical changes in the cellulose macromolecule during activated oxidation with hypochlorite have exactly the same character as during oxidation without activator. Activated oxidation is accompanied by a smaller drop in the degree of polymerization than non-activated oxidation. It was established that activators only

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Chemical Conversions of Cellulose during Activated Oxidation with Hypochlorite

accelerate all oxidation processes. The difference in the final results namely, smaller drop in polymerization and greater whiteness of the cellulose at a uniform degree of oxidation, is explained by the kinetic conditions of the activated and nonactivated reactions and also by the equal degree of acceleration of cellulose oxidation.

Tables, graphs. There are 4 references, 3 of which are Slavic.

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SUBMITTED: October 12, 1956

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Card 2/2

62-1-16/21

AUTHORS: Ivanov, V. I.; Lenshina N. Ya.; Ivanova, V. S.

TITLE: About the Ion Exchange in Dicarboxycellulose (K voprosu ob ionnom obmene na dikarboksitsellyuloze)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Khimicheskikh Nauk, 1957, No. 1, pp. 118-119 (U.S.S.R.)

ABSTRACT: A study of interchange reaction of hydroxy cellulose showed that the sorption of Ni and Fe cations by cellulose oxidized with sodium periodate and sodium chlorite is equivalent to the amount of the carboxyl groups. The carboxyl groups in the hydroxy cellulose, prepared with certain changes, were determined by two different methods. It was found that the dynamic interchangeability of hydroxycellulose, in the case of nickel acetate, is 0.5 and 0.7 of the total interchangeability. The equivalent absorption of Ni^{++} and Fe^{+++} by oxidized cellulose indicates that inorganic

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About the Ion Exchange in Dicarboxycellulose 62-1-16/21

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cations react preferably with the carboxyl groups in the cellulose. It was assumed that the ion absorption characteristics of the hydroxy cellulose are due to the chelate orientation of the carboxyl groups in the elementary glucose ring. Using Ni and Fe-salts as an example, the authors showed the differences in the bond stability of hydroxy cellulose - metal ion system, which makes it possible to utilize this system for the splitting of cations.

Camparative data on the carboxyl groups and the absorption characteristics of cellulose are presented in tables.

Tables. There are 4 references, of which 2 are Slavic

ASSOCIATION: Academy of Sciences of the USSR, Institute of Organic Chemistry imeni N. D. Zelinskiy

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SUBMITTED October 17, 1956

AVAILABLE: Library of Congress

IVANOV, V.I.

Structure and decompostion of cellulose molecules. Izv.AN SSSR.Otd.
khim.nauk no.3:358-365 Mr '57. (MLRA 10:5)

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SSSR.
(Molecules) (Cellulose)